

Subject Index

- Aging**
effects of parent phase aging on the martensitic transformation in a CuZnAl alloy, 145
- Alloying**
SiC-reinforced aluminium composite made by resistance sintering of mechanically alloyed powders, 153
- Alloys**
correlation of mechanical properties with non-destructive evaluation measurements in Al-Li alloys, 7
crack initiation mechanisms in low cycle fatigue of aluminium alloy 7075 T6, 41
effect of strain rate on tensile ductility for a series of dispersion-strengthened aluminium-based alloys, 81
factors influencing the thermal stability of non-crystalline alloys based on Pd-Si, 169
microcrack nucleation and sustained-loading crack growth in Al-Li alloys, 23
precipitation and reversion processes in a β -Ti alloy, 135
- Alumina**
cyclic thermal shock in SiC-whisker-reinforced alumina composite, 113
- Aluminium**
carbide-dispersion-strengthened B2 NiAl, 103
correlation of mechanical properties with non-destructive evaluation measurements in Al-Li alloys, 7
crack initiation mechanisms in low cycle fatigue of aluminium alloy 7075 T6, 41
effect of strain rate on tensile ductility for a series of dispersion-strengthened aluminium-based alloys, 81
effects of parent phase aging on the martensitic transformation in a CuZnAl alloy, 145
microcrack nucleation and sustained-loading crack growth in Al-Li alloys, 23
SiC-reinforced aluminium composite made by resistance sintering of mechanically alloyed powders, 153
- Atomization**
flow visualization study of supersonic inert gas-metal atomization, 161
- Boron**
magnetic and thermal properties of $[\text{Fe}_{100-x}\text{M}_x]_{83}\text{B}_{12}\text{Si}_5$ ($\text{M} \equiv \text{Cr, Mo, Nb or V}$) amorphous ribbons, 239
- Carbon**
carbide-dispersion-strengthened B2 NiAl, 103
cyclic thermal shock in SiC-whisker-reinforced alumina composite, 113
residual stress and stress distribution in a WC-Ni composite, 127
SiC-reinforced aluminium composite made by resistance sintering of mechanically alloyed powders, 153
- Chip segmentation**
proposal for the onset of chip segmentation in machining, 219
- Chromium**
magnetic and thermal properties of $[\text{Fe}_{100-x}\text{M}_x]_{83}\text{B}_{12}\text{Si}_5$ ($\text{M} \equiv \text{Cr, Mo, Nb or V}$) amorphous ribbons, 239
precipitation of Laves' phase in 9Cr1Mo steels, L5
- Composites**
cyclic thermal shock in SiC-whisker-reinforced alumina composite, 113
residual stress and stress distribution in a WC-Ni composite, 127
SiC-reinforced aluminium composite made by resistance sintering of mechanically alloyed powders, 153
- Copper**
effects of parent phase aging on the martensitic transformation in a CuZnAl alloy, 145
- Corrosion**
influence of the stress intensity factor on the fractography of stress corrosion cracking of 316 stainless steel, 59
- Crack growth**
deformation and subcritical crack growth under static loading, 51
fatigue crack growth from an artificial flaw, 73
initiation and early stages of corrosion fatigue cracks in a structural steel, L1
microcrack nucleation and sustained-loading crack growth in Al-Li alloys, 23
- Crack initiation**
crack initiation mechanisms in low cycle fatigue of aluminium alloy 7075 T6, 41
- Cracking**
influence of the stress intensity factor on the fractography of stress corrosion cracking of 316 stainless steel, 59
- Crazing**
effect of cold rolling on crazing of polycarbonate, 231
- Chromium**
precipitation of Laves' phase in 9Cr1Mo steels, L5
- Deformation**
deformation and subcritical crack growth under static loading, 51
modelling the effects of recrystallization on the flow behavior during hot deformation by modifying an existing constitutive model
I: conceptual development of the MATMOD-ReX equations, 87
II: predictive and fitting capacities, 95
substructures and their changes in high purity titanium during tensile deformation, 33
- Ductility**
effect of strain rate on tensile ductility for a series of dispersion-strengthened aluminium-based alloys, 81
- Dynamic equilibrium**
dynamic equilibrium induced by ball-milling in the Ni-Zr system, 185
- Embrittlement**
hydrogen-inclusion interaction in tempered martensite embrittled SAE 4340 steels, 17

Fatigue

- crack initiation mechanisms in low cycle fatigue of aluminium alloy 7075 T6, 41
- fatigue crack growth from an artificial flaw, 73
- initiation and early stages of corrosion fatigue cracks in a structural steel, L1
- stress concentrations and the Mott mechanism in fatigue failure, 1

Ferrite

- effect of arrangement of acicular ferrite in a Widmanstätten microstructure on fracture of mild steel, 211

Flow behavior

- modelling the effects of recrystallization on the flow behavior during hot deformation by modifying an existing constitutive model
- I: conceptual development of the MATMOD-ReX equations, 87
- II: predictive and fitting capacities, 95

Flow

- flow visualization study of supersonic inert gas-metal atomization, 161

Fractography

- influence of the stress intensity factor on the fractography of stress corrosion cracking of 316 stainless steel, 59

Fracture

- effect of arrangement of acicular ferrite in a Widmanstätten microstructure on fracture of mild steel, 211
- fracture mechanics determination of stress profiles in Na-K ion-exchanged glass optical waveguides, L9

Hydrogen

- hydrogen-inclusion interaction in tempered martensite embrittled SAE 4340 steels, 17

Inclusions

- hydrogen-inclusion interaction in tempered martensite embrittled SAE 4340 steels, 17

Inert gases

- flow visualization study of supersonic inert gas-metal atomization, 161

Iron

- magnetic and thermal properties of $[\text{Fe}_{100-x}\text{M}_x]_{83}\text{B}_{12}\text{Si}_5$ ($\text{M} \equiv \text{Cr, Mo, Nb or V}$) amorphous ribbons, 239

Laves' phase

- precipitation of Laves' phase in 9Cr1Mo steels, L5

Lithium

- correlation of mechanical properties with non-destructive evaluation measurements in Al-Li alloys, 7
- microcrack nucleation and sustained-loading crack growth in Al-Li alloys, 23

Magnetic properties

- magnetic and thermal properties of $[\text{Fe}_{100-x}\text{M}_x]_{83}\text{B}_{12}\text{Si}_5$ ($\text{M} \equiv \text{Cr, Mo, Nb or V}$) amorphous ribbons, 239

Martensite

- effects of parent phase aging on the martensitic transformation in a CuZnAl alloy, 145
- hydrogen-inclusion interaction in tempered martensite embrittled SAE 4340 steels, 17

MATMOD-ReX equations

- modelling the effects of recrystallization on the flow behavior during hot deformation by modifying an existing constitutive model

- I: conceptual development of the MATMOD-ReX equations, 87

Mechanical properties

- correlation of mechanical properties with non-destructive evaluation measurements in Al-Li alloys, 7

Milling

- dynamic equilibrium induced by ball-milling in the Ni-Zr system, 185

Molybdenum

- magnetic and thermal properties of $[\text{Fe}_{100-x}\text{M}_x]_{83}\text{B}_{12}\text{Si}_5$ ($\text{M} \equiv \text{Cr, Mo, Nb or V}$) amorphous ribbons, 239
- precipitation of Laves' phase in 9Cr1Mo steels, L5

Mott mechanism

- stress concentrations and the Mott mechanism in fatigue failure, 1

Nickel

- carbide-dispersion-strengthened B2 NiAl, 103
- dynamic equilibrium induced by ball-milling in the Ni-Zr system, 185
- residual stress and stress distribution in a WC-Ni composite, 127

Niobium

- magnetic and thermal properties of $[\text{Fe}_{100-x}\text{M}_x]_{83}\text{B}_{12}\text{Si}_5$ ($\text{M} \equiv \text{Cr, Mo, Nb or V}$) amorphous ribbons, 239

Non-destructive evaluation

- correlation of mechanical properties with non-destructive evaluation measurements in Al-Li alloys, 7

Palladium

- factors influencing the thermal stability of non-crystalline alloys based on Pd-Si, 169

Polycarbonate

- effect of cold rolling on crazing of polycarbonate, 231

Potassium

- fracture mechanics determination of stress profiles in Na-K ion-exchanged glass optical waveguides, L9

Precipitates

- precise transmission electron microscopy determination of the size and the volume fraction of precipitates, as exemplified by Nimonic PE16, 199

Precipitation

- precipitation and reversion processes in a β -Ti alloy, 135
- precipitation of Laves' phase in 9Cr1Mo steels, L5

Rapid solidification

- microstructural studies on rapidly solidified Inconel 625, 175

Recrystallization

- modelling the effects of recrystallization on the flow behavior during hot deformation by modifying an existing constitutive model
- I: conceptual development of the MATMOD-ReX equations, 87
- II: predictive and fitting capacities, 95

Reversion

- precipitation and reversion processes in a β -Ti alloy, 135

Silicon

- cyclic thermal shock in SiC-whisker-reinforced alumina composite, 113
- factors influencing the thermal stability of non-crystalline alloys based on Pd-Si, 169

- magnetic and thermal properties of $[\text{Fe}_{100-x}\text{M}_x]_{83}\text{B}_{12}\text{Si}_5$ ($\text{M} \equiv \text{Cr, Mo, Nb or V}$) amorphous ribbons, 239
- SiC-reinforced aluminium composite made by resistance sintering of mechanically alloyed powders, 153
- Sintering
SiC-reinforced aluminium composite made by resistance sintering of mechanically alloyed powders, 153
- Sodium
fracture mechanics determination of stress profiles in Na-K ion-exchanged glass optical waveguides, L9
- Strain
effect of strain rate on tensile ductility for a series of dispersion-strengthened aluminium-based alloys, 81
- Strengthening
carbide-dispersion-strengthened B2 NiAl, 103
effect of strain rate on tensile ductility for a series of dispersion-strengthened aluminium-based alloys, 81
- Stress
fracture mechanics determination of stress profiles in Na-K ion-exchanged glass optical waveguides, L9
influence of the stress intensity factor on the fractography of stress corrosion cracking of 316 stainless steel, 59
residual stress and stress distribution in a WC-Ni composite, 127
stress concentrations and the Mott mechanism in fatigue failure, 1
- Thermal properties
magnetic and thermal properties of $[\text{Fe}_{100-x}\text{M}_x]_{83}\text{B}_{12}\text{Si}_5$ ($\text{M} \equiv \text{Cr, Mo, Nb or V}$) amorphous ribbons, 239
- Thermal shock
cyclic thermal shock in SiC-whisker-reinforced alumina composite, 113
- Thermal stability
factors influencing the thermal stability of non-crystalline alloys based on Pd-Si, 169
- Titanium
precipitation and reversion processes in a β -Ti alloy, 135
substructures and their changes in high purity titanium during tensile deformation, 33
- Transmission electron microscopy
precise transmission electron microscopy determination of the size and the volume fraction of precipitates, as exemplified by Nimonic PE16, 199
- Tungsten
residual stress and stress distribution in a WC-Ni composite, 127
- Vanadium
magnetic and thermal properties of $[\text{Fe}_{100-x}\text{M}_x]_{83}\text{B}_{12}\text{Si}_5$ ($\text{M} \equiv \text{Cr, Mo, Nb or V}$) amorphous ribbons, 239
- Waveguides
fracture mechanics determination of stress profiles in Na-K ion-exchanged glass optical waveguides, L9
- Widmanstatten microstructure
effect of arrangement of acicular ferrite in a Widmanstatten microstructure on fracture of mild steel, 211
- Zinc
effects of parent phase aging on the martensitic transformation in a CuZnAl alloy, 145
- Zirconium
dynamic equilibrium induced by ball-milling in the Ni-Zr system, 185

